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PUBLICATIONS FOR TEACHERS

THE JOURNAL OF GEOGRAPHY

A MAGAZINE FOR TEACHERS

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"And as for our first geography!"

We shall never forget it. To this day we can tell you that on page 89 was a remarkable picture of the Bridge of Sighs and that on page 96 we were informed that a fair is held every twelve years in Nijni-Novgorod but that in other years it is so quiet that grass may grow in the streets.

IT IS the odd and useless bits of information that will stay by the children we teach through many years unless geography is taught from the right textbooks. The best of all geographies are:

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VOLUME XXII SEPTEMBER, 1923 NUMBER 6

BARBADOS: A GEOGRAPHICAL STUDY OF A DENSELY POPULATED ISLAND IN TROPICAL AMERICA

ALICE FOSTER

Mount Holyoke College

Few places in the world support a denser rural population than does Barbados, the most easterly of the Lesser Antilles. More than 156,000 people live upon this little island, whose total area is only 166 square miles, or somewhat less than that of five American congressional townships. The average population density is 940 per square mile, which is far greater than that of our most densely populated manufacturing state. Barbados has no large cities, and there is no industry which seems capable of attracting a large number of workers. Bridgetown has 13,486 inhabitants, and outside of this, the only city, the population extends so regularly over the whole island that it is difficult to determine the limits of the villages.

THE PRODUCTION OF A CASH CROP

Agriculture is the dominant interest, and practically all the land is utilized in some way. Some estimates place the proportion of productive land as high as 94 per cent, the remaining 6 per cent representing the aggregate surface occupied by towns, villages, roads, cliffs, and streams. According to official figures, out of a total area of 106,470 acres, about 74,000 acres are devoted to the production of sugar on a large scale, the remaining 32,000 acres including, besides the unproductive land, numerous small plots of ground used for the raising of provision crops. Sugar is the one important cash commodity produced, but several other agricultural products are exported in small quantities, and the greater part of the food consumed by the peasants is produced locally.

In the geological structure of the island several features are of importance as contributing to agricultural success. About six-sevenths of the surface is covered with a layer of porous coral lime-

stone, whose maximum thickness is somewhat more than 200 feet. The coral rock consists of a series of old reefs, the lowest of which forms steep cliffs 40 feet or more in height about the south and west shores. Following the contour of the higher reefs, the surface rises by a succession of terraces and slopes to a curved ridge which marks the edge of the limestone area, and which culminates in Mt. Hillaby, 1104 feet above sea level. Beyond this ridge and facing the northeast trades is a rugged district known as Scotland. The relief of the island is great enough so that erosion would be active were it not that

FIG. 1. Barbados and the Caribbean Region

the porous limestone permits the water to penetrate readily beneath the surface and to reach the sea by underground channels. The underground drainage is so well developed that on the limestone area there is little surface run-off, no gullying, and almost no soil wash. The soils of the terraces are residual red clays and loams and black earths. They are everywhere thin, for in few places is the limestone more than two or three feet below the surface. The porosity of the underlying rock is, therefore, largely responsible for the fact that the soils are still productive, altho Barbados has a history of uninterrupted sugar-production dating from before 1650.

The soils of the limestone terraces are all suited to the production of sugar cane. Fertility is preserved by intensive methods. Early

in the history of the colony Barbadians began the practice of manuring their fields. Long before the end of the 17th century all the land was occupied, and the native fertility of the soil was decreasing. A visitor to the island in 1655 said of it, "It is manured the best of any Illand in the Inges." George Washington visited Barbados in 1752, and in his journal he noted the clever way in which the people contrived to get the maximum of fertilizing value from stable manure. Earth was piled up to form a broad, low mound, and on the top of this mound fifteen or sixteen cattle were tied at night and at feeding time. Once in three months the earth from this mound, with all the "trash tramped into it," was spread on the fields and a new mound thrown up. At present nearly every plantation has its marl pit, from which material is extracted for fertilizing purposes. Part of the cane fiber from the mills is returned to the fields. Crop rotation is practiced, and there is both import and manufacture of commercial fertilizer.

Most of the export sugar is produced on the larger estates, of which there are approximately 320. These are not excessive in size, 200 to 300 acres being considered a large plantation. The labor is performed, in large part, by owners of small plots of ground, many of these holdings being no more than one-half acre. Owners of three acres or more devote a part of their land to commercial crops, usually cane or cotton. In the census of 1921, 34,157 persons were listed as engaged in agriculture, either as proprietors and employers or as laborers.

In developing and improving methods of culture the planters are aided greatly by the Imperial Department of Agriculture, which, for more than twenty years has been carrying on extensive experiments in plant breeding and soil culture. New varieties of cane have been developed, and planters in different parts of the island have co-operated by testing the new varieties in their districts. The same variety is not equally suitable for all plantations, for conditions are far from uniform. The rainfall for 1917 furnishes an example of the varying climatic conditions. The average precipitation for the island was 68.61 inches, but the records at the 140 stations where observations are made vary from 46 inches to 87 inches. Differing conditions of soil and of exposure also contribute to make it necessary for each planter to be something of a specialist. The cooperation of the planters facilitates the adoption of new varieties of cane in parts of the island where they prove their superiority. Some of these have proved so desirable that orders for cuttings are received annually from other sugar-producing sections, even as far away as Java.

Cheap power for grinding is furnished by the trade winds, which

blow most of the year with a velocity of about ten miles an hour. Great old-fashioned Dutch wind mills are a prominent feature of the landscape, tho some of the larger estates now have modern machinery, and about one-third of the sugar establishments use steam power. The high price of sugar during the war accelerated the change to modern machinery.

Most of the sugar is shipped in the raw state to American or Canadian refineries. Formerly the United States received most of the export, but more recently, tariff regulations have turned the trade to Canada. During the last few years Barbadian "Fancy Molasses" has found a ready sale in Canadian markets. In some years the receipts from the sale of this product have exceeded those from sugar. Fancy Molasses is the entire juice of the cane boiled down to the desired consistency, and is not a by-product of sugar making as is ordinary molasses. As fuel for evaporating, use has been made of cane fiber from the mills, and of Barbados tar, a bituminous substance found in the Scotland district. Recently petroleum has been added to the supply of local fuels available. Explorations for oil have been going on since about 1910, and in the autumn of 1922 the British Union Oil Company (Ltd.), which had been in the field for some two years, reported a daily production of 500 barrels from its wells.

The annual sugar export from 1909 to 1920 varied from 35,000 to 73,580 tons, Fancy Molasses being equated as sugar in these figures. About 35,000 acres are annually in cane, the rest of the sugar area being under rotation and catch crops or in preparation for next year's crop. Comparison of the yield with that of other sugar-producing regions is difficult, but from the data available it seems to be between that of Cuba, obtained under extensive methods on virgin soil, and the Hawaiian yield, produced by the most specialized methods known to the modern world.

Realizing the disadvantages of depending upon a single export commodity, the Department of Agriculture has made repeated efforts to discover some other crops which might be produced in commercial quantities. In general, conditions are favorable for the growth of sea island cotton, and there is a small production of this crop. Export of the fiber reached its maximum in 1908, since which time there has been a steady decline. The chief difficulty in the way of the cotton industry seems to be the susceptibility of the plant to disease and insect pests. Department specialists are hoping to overcome this difficulty by developing from the native wild cotton a hybrid strain which will be immune to the prevailing pests, and which will give

a large yield of high-quality fiber. Further efforts of the department to free the people from dependence upon a single cash crop have been directed towards the shipment of mangos, cassava, yams, bananas, and other fruits and vegetables. Trial shipments of melons for the New York winter market have been made, and good prices have been received.

THE LOCAL FOOD SUPPLY

Unlike the people in some of the larger and less densely populated sugar areas, the Barbadians produce a large proportion of their own food. This production is to be accounted for in part by the sugar rotation, but food crops are produced also upon the small land holdings and upon land not suitable for sugar cane. In 1912 there were 13,152 owners of land in lots of less than five acres, and the number of small holdings was increasing. Nearly every cabin has its little patch of ground where provision crops, such as yams, yucca, bananas, squash, plantain, breadfruit, onions, and beans, are grown for family use. The rest of the food supply and other necessities are purchased with earnings for labor done elsewhere, usually in the cane fields or about some sugar establishment. Since the growing season is continuous, it is possible to secure two or three food crops annually. So carefully is every available foot of ground utilized that some visitors to the island have estimated that a thrifty Barbadian can make a living from a half-acre of ground.

In the Scotland district cassava is the chief crop, for there the soils are not adapted to sugar-cane culture. Erosion has removed the coral rock from that part of the island, and the underlying shales and sandstones have been carved into hills whose ruggedness suggested the name of the district. The Scotland soils vary from loose sand to clays so tough that, after a rain, water stands in pools until it evaporates. From the steeper slopes nearly all the soil has been washed down into the valleys, in some of which are small streams fed by permanent springs. A strip of barren dune sand borders the coast.

In an area as densely populated as Barbados, the provision of a meat supply is a difficult matter. The small size of the island and the prevailing intensive agriculture preclude the use of any large proportion of the land for pasture. A total area of about 10,000 acres is annually in grass. A part of this is permanent pasture, including some sandy hills in the Scotland district which are unfit for plow land. Local resources of feed are supplemented by an annual import of

some three million pounds of oil meal and other stock foods. Goats are kept for milk. About 1910 the Department of Agriculture imported a number of cattle and goats of improved breeds, with the idea of building up the quality of the herds, and particularly with the hope of decreasing infant mortality among the peasants by improving the milking qualities of their goats. Within a few years a marked improvement in the appearance of the herds was noted.

It is from the sea, however, that the greater part of the meat supply of the peasants is obtained, for many kinds of edible fish frequent the vicinity. Most of the varieties are rather unfamiliar in American markets. Among them are the snapper, the dolphin, and the king fish. White sea urchins, locally known as sea eggs, are found in the shallow water between the main island and the Quarantine Station, and these form a staple article of food. In spite of protection by a closed season, these animals seem to be decreasing, and a party of American scientists who visited the island in 1918 were asked whether they could not contribute some biological information which might make it possible to replenish this important food resource.

Barbadian fishermen accomplish the seemingly impossible task of catching the flying fish, which are abundant off shore in summer. Fleets of crazy fishing boats with enormous sails cruise often as far as thirty miles from the island. Bait in small fragments is scattered upon the surface of the water, and when the flying fish gather about it they are caught in scoop nets. From the wharf, the fish are delivered to the consumers by women, who race thru the streets with their baskets, some of them going several miles to the more distant parts of the city. In 1918, six to ten fishes about ten inches in length could be bought for ten cents. This is by far the most important fishing industry in Barbados, and it furnishes employment for hundreds of men and women during the season. Often fishing boats are sunk by sudden squalls, but few lives are lost, for the men are nearly all excellent swimmers.

HOMES AND LIVING CONDITIONS

In spite of the hard struggle to obtain an adequate food supply, indications of poverty are not likely to be seen by a visitor to Barbados. Most of the people are poor, but their cheerfulness, contentment, and pride in their nationality suggest that there is little real suffering. Men and women are dressed in white, stiffly starched with cassava. Almost everyone can read and write. In 1921, 24,876 of the 36,487

children between the ages of five and fifteen were enrolled in the public and private schools.

The Barbadians take pride in their homes, and these are notably neat in appearance. Altho 60 per cent of the habitations consist of but one or two rooms, a large proportion of these house but one or two persons, and the average number of residents per house for the whole island is only four. H. W. Lofty, compiler of the official report on the 1921 census says, in writing of the habitations of the people, "They have always striven for the privilege of living in their separate houses, with but few exceptions, however small, in many cases, the hut might be.

"Wherever they are established in villages they invariably take pride in keeping, within the scope of their means, these small dwellings tidy. A large number of those working on plantations have been helped always by the plantation owners to keep their houses in repair by the credit of lumber repayable on the installment principle.

"The method of living by the people of this Island, altho in many instances the shelter is very frail, has, in my opinion, cultivated a feeling of contentment and pride amongst the thrifty and earnest working people which has a beneficial influence and redounds to their credit."

Nearly one-tenth of the entire number of houses, or 3731, are of stone. The local limestone is soft enough to be sawed into blocks, but hardens upon exposure to the atmosphere. The stone is too porous to be entirely satisfactory, but a coat of plaster reduces the tendency to gather dampness. A small brick factory in the Scotland district marks the outcrop of clays suitable for the manufacture of roofing tile.

THE PORT OF BRIDGETOWN

The non-agricultural activities which contribute to the support of the Barbadian population are centered largely about the port of Bridgetown, which has a business far out of proportion to the size of the island. Within the year 1915, the vessels cleared from the port numbered 1262, and their aggregate gross tonnage was 1,690,484 tons. During the same year, the business of the port amounted to nearly $12,000,000 The larger items of export are sugar, molasses, and cotton, but there are small shipments of many local products, including bread and biscuits, fresh fruits, poultry, swine and sheep for food, manjak, lime, coke, and ice.

A large part of the trade of Barbados is due to conditions which

make Bridgetown a port of call for trans-Atlantic liners and an entrepot for the lesser Antilles and the Caribbean coast of South America. Situated 100 miles farther east than any other Caribbean port, and possessing a good natural harbor, Bridgetown has been, thruout its history, a port of call for vessels bound from Europe for the Caribbean Region. The outer harbor, formed by Carlisle Bay and protected somewhat by Pelican Island, is on the leeward side of the island and is a safe and ample roadstead with water deep enough for the largest boats. The inner harbor, or careenage, is the mouth of Indian River, which issues from a limestone cavern and flows as a surface stream for a short distance.

Among the lines which maintain regular services to Bridgetown are the Royal Mail Steam Packet Company, the Quebec Steamship Company, and the Dutch West India Mail. From Bridgetown branch steamers give connections with various Caribbean ports, while numerous small sailing vessels collect tropical products from the neighboring islands and the Caribbean coast of South America and deliver them at Bridgetown for re-export. In 1912, commodities of foreign origin made up nearly one-third of the exports from Barbados, which were valued at more than $5,000,000.

Besides the regular liners booked for Bridgetown, many other vessels bound from Europe for the West Indies or from New York for South America touch to bunker and take on supplies. Thus, its location at the crossing of north-south and trans-Atlantic ocean routes gives Bridgetown, in addition to the commerce of the island and the entrepot business, a considerable importance as a coaling and supply station. Coal is the largest item of import. Ninety thousand tons of Welsh and American coal were imported in 1915, most of it being sold for bunkering purposes. The provisioning of ships creates an important market for fresh fruits and vegetables, bread and biscuits, and other food supplies, thus encouraging certain lines of agriculture and of manufacturing.

The direct and indirect influences of the port upon economic interests are numerous. Employment about the docks is furnished to a large number of stevedores, boatmen, ship carpenters, and other laborers. Harbor improvements are not extensive and are available only for light-draft vessels which can pass the bar at the entrance to the careenage. Larger vessels anchor in the roadstead a mile from shore, and the transfer of freight and passengers across the intervening water employs a host of lighters and small row boats. At the local shipyards small sailing vessels for the inter-island trade

are constructed, and the Blackwood Dry Dock, built to admit vessels of 14-foot draft is equipped to undertake extensive repairs. The entrepot business necessitates storage and this explains the large warehouses which attract the attention of visitors

The ready accessibility of the port is one of the reasons for the large number of visitors to Barbados The number of first-class passengers landing in 1912 was nearly 4000. On April 24th, 1921 the day on which the last census was taken, there were 527 visitors present on the island. Many business men visit Barbados, and nearly every passenger steamer brings a crowd of tourists from Europe, Canada, or the United States. Since many remain for several months, the tourist traffic is a valued resource. House and hotel accommodations are increasing, and the Bridgetown hotels are said to be among the best in Middle America. Automobiles are available for excursions, and the roads, surfaced with crushed limestone, or cut into the bed rock, are kept in good repair. Memories of pleasant drives between fields of waving cane, with views of the sea to greet the eye at every vantage point, linger in the mind of the tourist and entreat him to return. An abundant supply of pure water derived from underground streams and piped along the highways, along the Bridgetown streets, and to every village and estate is one of the attractions of Barbados. The heat is not oppressive, for the island is distant from any of the large land bodies. Its climate is reputed to be notably healthful, and among the annual visitors are many invalids and convalescents from the Caribbean Region, and even from Brazil and Argentina.

The city of Bridgetown is the meeting point for the interests of the sea and those of the island agriculture, and it owes its importance to their combined influence. This fact is reflected in the list of small but varied manufacturing industries. Certain establishments, among which are the 291 sugar works, the Reef Manure and Chemical Works, the Barbados Cotton Factory, and the Thorne Cotton Ginnery and Oil Company's plant, show clearly their relation to local agriculture. Other p'ants, of which the Ice Manufactory and the two biscuit factories are examples, sell their products not only on the island, but also to ships in the harbor and to other islands.

RECENT DECREASE IN POPULATION

While Barbados is free from many of the common effects of overcrowding. various conditions indicate that the population density has reached the saturation point. The proportion of negroes has increased until, to-day, white people make up less than 7 per cent

of the total population. More than a hundred years ago the demands upon the resources of the land were so great that nothing was allowed to go to waste Even the weeds growing among the corn were gathered and used as provender for stock. As the economic pressure increased, emigration was easier for the well-to-do whites than for the descendants of former slaves. This sifting process was the greater for the fact that the only way to get away from Barbados was by means of an expensive sea journey, not even another island lying within a radius of 100 miles.

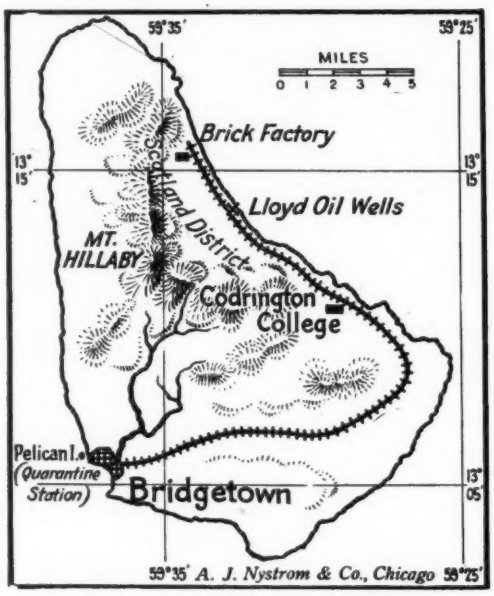

FIG. 2. Sketch Map of Barbados

At present, in spite of extreme thrift and frugality, the peasants are always perilously near the border line between comfort and starvation. Human labor is so cheap that it competes with beasts of burden. Some of the drays on the Bridgetown streets are drawn by Kentucky mules, while others are drawn by teams of sweating negroes. In 1912 the rainfall was twenty inches less than the average, and there was an almost complete failure of provision crops. There was a decrease in the revenue and trade of the island, the cost of living was increased for all classes, the number of persons receiving aid from the poor-relief fund was unusually large, and the death rate was increased by 50 per cent. The number of convictions for petty predial larceny during the year was nearly as great as the number of similar convictions for the two-year period immediately preceding.

It is not strange that the prevailing ideas of honesty should draw

some of their characteristics from the familiarity of the peasants with hunger. A party of Americans who were spending the summer in Barbados, astonished at the bill for their first week's provisions, found, upon investigation, that, while they were paying seven servants, they were feeding many more. The cook had a servant of her own, and as many extras as possible were brought in on one pretext or another, so that usually there were ten or a dozen persons about the kitchen at meal time.

The decreasing population is further evidence of the severe struggle for existence. Succeeding census reports show a constant increase up to 1891. No census having been taken in 1901, it is impossible to determine when the decline began, but in 1911 the number of inhabitants was about the same as in 1871, and in 1921 there were only about 4000 more people on the island than in 1861. These facts are shown in the following table, which gives the results of the last six censuses:

Year	*Population*	*Density per square mile*
1861	152,275	917
1871	161,594	973
1881	171,452	1030
1891	182,306	1096
1901	No census taken	
1911	171,983	1034
1921	156,512	940

After a careful study of the matter, Mr. Lofty concludes that the decrease is due to an abnormal death rate, especially among infants, a decrease in the birth rate, and a constant stream of emigration. Like other areas whose resources are taxed severely, Barbados is an exporter of men. During recent years an increasing number of emigrants has been drawn away, attracted by greater opportunities for work elsewhere. The construction of the Panama Canal, the sugar boom in Cuba, and the labor shortage caused by the war led many Barbadians to seek their fortunes abroad. The amount of money received in Barbados by postal orders from the United States, Canada, and Panama has shown a corresponding increase In 1919 it was a half-million dollars, and the total receipts for the ten year period ending with 1920 were more than $3,500 000. Part of this sum is to be credited, no doubt, to business transactions, but the greater portion comes, almost certainly, from Barbadian emigrants who send back a part of their earnings to help the home folks.

This brief survey of conditions in Barbados leads to the conclusion that many factors of the geographical environment contribute to make

possible the support of the dense population. Prominent among these are the following: (1) The growing season is continuous and climate and soil are suited to the production of a crop which finds a large and steady demand in world markets. (2) The agricultural resources are utilized to an unusual degree, and nothing goes to waste. (3) Location at the crossing of much-traveled ocean routes and the possession of a good natural harbor have made Bridgetown an entrepot port of call, and coaling and supply station. (4) Political relations have been fortunate, and under the direction of the British government the people have had the aid of modern science in working out their problems of adjustment to environment. The recent decrease in population suggests a problem which is worthy of further study.

BIBLIOGRAPHY

Barbados. Bluebook for 1915-1916

Barbados. Report of the Department of Agriculture. Annual publication

Barbados Department of Agriculture, Report on Sugar-cane Experiments. Annual publication

Captain E. Barnett, "Barbados," in *West India Pilot*, Vol. II, pp. 16-25. (Fifth edition 1899) Great Britain Hydrographic Office, London, 1899

British Parliamentary Accounts and Papers, 1914, Vol. 57, No. 779; 1914-1916, Vol. 78

Frank Cundall, Jamaica in 1912. Kingston, Jamaica, 1912

Amos Kidder Fiske, The West Indies
G. P. Putnam's Sons, New York and London, 1902

Harris, and other consular officers, The West Indies as an Export Field, Chapter XII. U. S. Bureau of Foreign and Domestic Commerce. Special Agent Series, No. 141. Washington, 1917

M. A. Harrison and A. J. Jukes-Brown, Geology of Barbados. Barbadian Legislature, 1890

Robert T. Hill, Cuba and Porto Rico with the other Islands of the West Indies.
The Century Company, New York, 1898

Chester Lloyd Jones, Caribbean Interests of the United States, pp. 47-49.
D. Appleton and Company, New York and London, 1916

C. P. Lucas, A Historical Geography of the British Colonies, Vol. II, The West Indies. Oxford, 1905, Clarendon Press

Chester W. Martin, "Barbados," in *Supplement to Commerce Reports*, 1915, No. 22c, pp. 9-13; No. 22b, pp. 8-10

C. C. Nutting, Barbados-Antigua Expedition.
University of Iowa, Iowa City, Iowa, 1920

Frank Pitman, The Development of the British West Indies.
Yale Historical Publications, Yale University Press, New Haven, 1917

United States Bureau of Foreign and Domestic Commerce, Commerce Reports, October 2, 1922, p. 22

United States Hydrographic Office, West Indies Pilot. Washington, 1918

G. D. Urquhart, Dues and Charges on Shipping in Foreign and Colonial Ports.
George Philip and Son, Ltd., London, 1910

A. Hyatt Verril, The Book of the West Indies.
E. P. Dutton and Company, New York, 1917

George Washington, *Barbados Journal*, 1751-2. (Copied by J. M. Toner.) Joel Munsell's Sons, Publishers, Albany, 1892. (In same volume, Notes by Mr. Toner)

Henry W. Lofty (compiler) Report on the Census of Barbados 1911-1921

A LETTER FROM THE FAR EAST

H. EGGINK

Surabaya, Java

Since January last I have read your *Journal of Geography* with a colleague of mine. Just as in the United States many teachers in Holland and in the East Indies think it necessary to discard the old methods, especially in teaching geography. We have followed the German methods too long and we are now looking to England and the New World for better. (Of course I do not mean to say anything to the disadvantage of German geography as a science; if so I should wrong my two highly esteemed teachers, Professor Wichmann and Professor Oestreich, "the European Davis," at Utrecht.)

To give proof of my interest in the contents of your monthly, I herewith offer you the account of a trip to the Tengger Mountains, with the pupils of the fourth class of the high school (Hoogere Burgerschool, our H. B. S.) at Surabaya.[1]

A MOUNTAIN TRIP

A trip with some twenty pupils requires far more preparation in the tropics than it does in Europe. In 1920 I was with twenty-five Dutch pupils "im Teutoburger Walde," Germany. Then we had great difficulties with passports, over crowded hotels, valutas, and German trains which could not transport so many bikes. In Holland sometimes more than a hundred bicycles go with the same train.

In "the Land of Eternal Summer" we had to deal with quite other difficulties, as we were to cover one hundred kilometers by motor car, ascending from 20 to 6000 feet. Besides, we had to reckon with the difference in climate: 27°C. to 14°C. And last, tho not least, there were pecuniary problems to be solved. It would be of high importance that the pupils whose parents were not in easy circumstances might also join the party: costs are commonly about $28.00 a person. Fortunately Mr. Reelich, managing director of the N. I. Hotelvereinigung (Hotelunion), whose company owns many hotels in Java—"our" hotel at Tosari—came to our aid. He fixed the prices

[1] For more details about our Land of Volcanoes I refer to a small work from the hand of our Consul at San Francisco: "Tropical Holland" by H. A. Van Coenen Torchinana (University Press, Chicago, Ill.). A "Guide," richly illustrated with many photographs, called "Come to Java," is to be had on application at the Touring Office, Ryswyk, Weltevreden. A collection of about 250 photographs with a short description written by myself will be published in the course of the next year. (Department of Visual Instruction, University of the State of New York, Albany.)

so very low that the necessary expenses amounted to about $7.50 a person.

It is perhaps desirable to give here some details about the curriculum of our schools, which is almost the same as in Dutch schools. The secondary school (H. B. S.) is the continuation of the primary schools and prepares the pupils for college as well as for life in general. There are five classes, and the average age of the pupils is from 13 or 14 to 18 or 19 years. The curriculum for geography runs as follows:

First year. General introduction and Europe
Second year. The other parts of the world
Third year. Holland and its colonies
Fourth year. Physiography
Fifth year. Economic geography. Repetition

The whole world is, therefore, an object of study and not simply some interesting parts only. In a large area like the United States a more intensive study is possible. In my opinion the last method has many advantages. Our methods often lead to learning thousands of facts by heart, which are more or less interesting, but which easily kills the interest of the pupils for geography.

In the fourth term volcanoes arrest the attention. This is especially true in Java, as it is a land with many volcanoes. To them and to the climate Java owes its fertility and hence its dense population.[2] By the aid of longitudinal sections, pictures and plastic (modelling powder) the inside as well as the outside of volcanoes has been clearly explained. Especially the caldera problem, as the Tengger shows, has our full attention. We explain somewhat Chamberlain's theory, probably concerning small calderas only; the shrinking and infusing theory of von Hochstetter; the cell-theory of Wing Easton and the latest of our volcanologists, Dr. Kemmerling, finding crater-removing the cause.

The curious part is, that less than 10 per cent of the pupils have ever ascended a volcano in this hot country; such an ascent is very fatiguing and the Dutch are no sporting men. When asked if they would like to go with a couple of teachers to the very top of the Bromo (Brahma)—7000 feet high(?) they expressed a strong desire to go but many parents raised objections and hence only twenty pupils out of a hundred were allowed to join the trip. (Fig. 1.)

THE EXCURSION

Saturday, October 7, was our day—their first excursion! A thirty-seat motoromnibus took us to Passoeroean. The road skirts

[2] In some parts 450 per square km.; Rhode Island 196.

the coast, going thru a low tropical plain,—very monotonous to us as we had seen it so many times,—with its cocoanut trees, bamboo bushes, bananas, rice, and sugar fields.

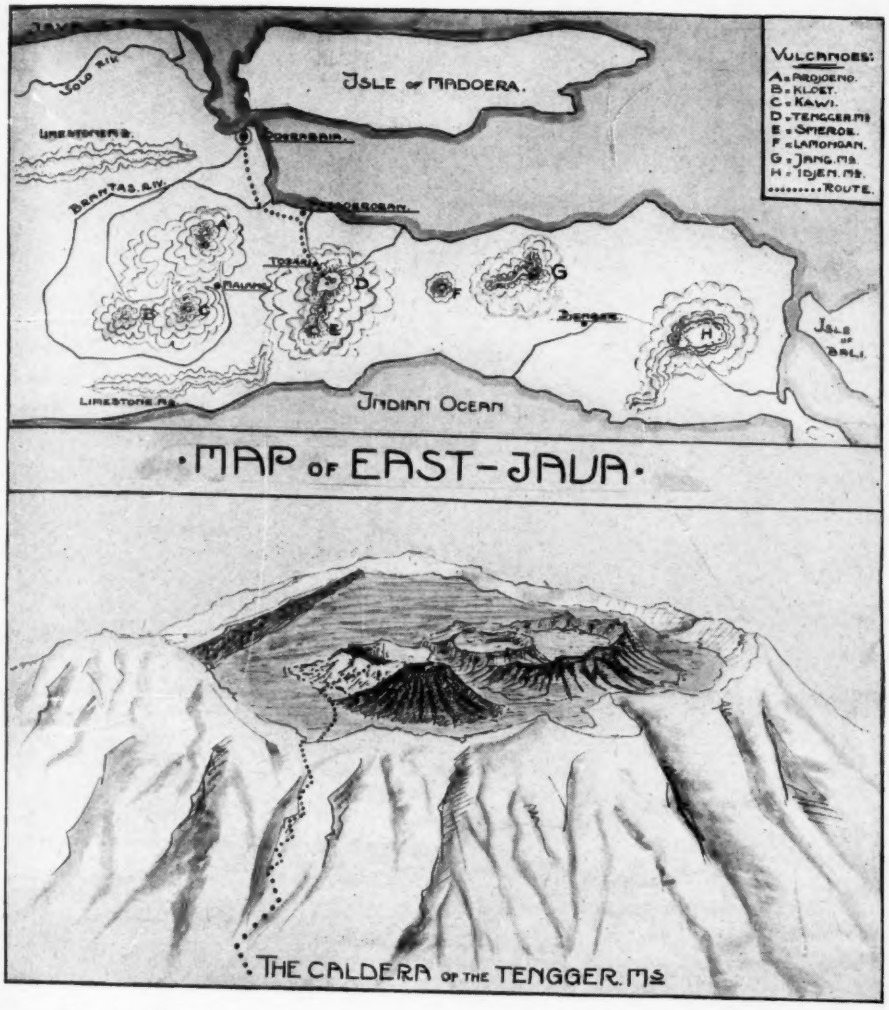

FIG. 1. Sketch map of eastern Java and the caldera of Tengger Mountains

Every now and then the Jave Sea glistens in the tropical sunshine thru the bamboo bushes. At Passoeroean we have to change and in two Stoers-Knights and a small hotel omnibus we soon reach the mountain foot and the Javanese chauffeurs lead us safely along the winding mountain road, with its more than three hundred bends, higher and higher to our hotel.

The landscape gradually alters. The sugar factories vanish and so do the wet rice fields and cocoanut trees. From the low sea-clay soil we reach the mountain slope, covered with erratic boulders ejected from the volcanoes. The weather-beaten volcanic soil is still fertile, but the vegetation has changed and becomes more or less European. Instead of "sawahs" (irrigated rice fields) we see dry maize fields everywhere. Every now and then we have a fine view of the plain far below, where the evening haze is slowly rising. In

Photo copyrighted by Furukawa

FIG. 2. Our way thru the tjemara forests

some places we drive thru neglected weed-grown coffee plantations dating from the time when the Javanese were compelled to grow this product for the government. Santos and a more modern and human system of government made an end of the matter.

The sun is set when we stop in front of the Tosari Hotel and the shouting of the girls and boys rings thru the quiet air. After a substantial supper of red cabbage and sausages (a Dutch banquet) and some dancing the children go to bed early, for at two in the morning the reveille will sound . . . It is fresh, almost cold, when the 'djongos' (Malay for boy) knocks at our doors and we jump out of our beds. Outside the Tenggerese, the Hindoo inhabitants of the Tengger Mountains, driven to the mountains by the Islan, long ago, hover in their thin clothes. One by one the girls and boys appear and after

Photo copyrighted by Kurkdjan

FIG. 3. A view from Moenggalpass. Tjemaras may be seen on the old crater walls; 700 feet below the sand sea desert with native paths across it; the conical Mt. Batok and Mt. Bromo in eruption (smoke only is visible); at the right Mt. Widodaren, and far in the background the old caldera wall again.

drinking a cup of hot coffee, we start for the Bromo, some on foot, others on horseback.

It is a bright moonlight night; the road winds along deep ravines with steep slopes and everything looks unreal—like a fairy tale. We pass an impressive tjemarawod, slender trees with pointed tops and thin needle shaped green twigs, which give the impression of a Dutch firwood. (Fig. 2.) At half past six in the morning we reach the Moenggalpass and far below lies the sand sea, the old desolate gigantic crater-bottom, in which four small eruption cones, the conical Batok and the still active Bromo being the most famous of them. (Fig. 3.)

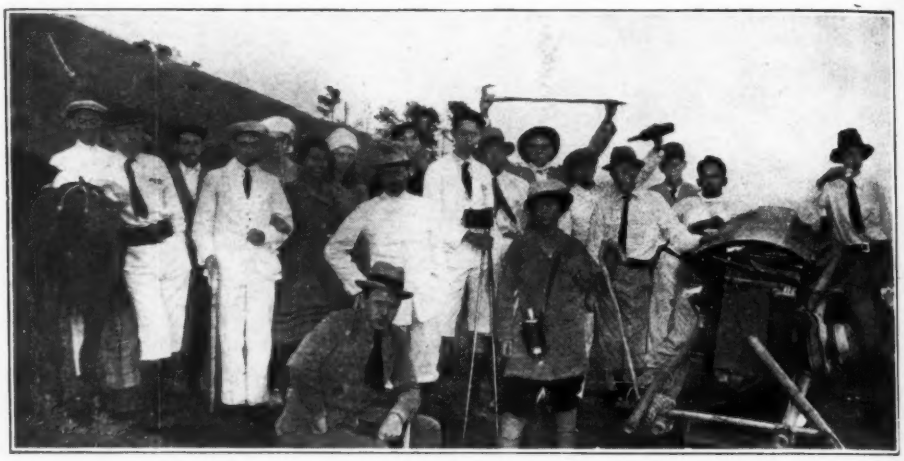

Photo by Van Hensbroek

FIG. 4. Teachers, pupils, horses, and sedan chair in Moenggalpass

It is dawn; the eastern horizon becomes rose colored, then flaming red, and soon after the first rays of the sun light the mountain tops, then the desert-looking plain.

We are too impatient for a long rest and so we descend the steep slope, some 700 feet in height, across the sand sea, ascend the Bromo and after an hour, we reach the small edge of the Bromo crater mound and have a look inside. Every ten minutes we hear a thundering sound and a thick cloud of smoke is thrust out and is drifted away by the wind.

Once a year the Tenggerese take here their sacrifices to Brahma, after whom the mountain is named. In former days a young girl was thrown into the depth, now only some hens and eatables are thrown in. Still under the spell of the fearful sight, we retrace our

steps and at one o'clock we are in our hotel again, not over-tired and quite satisfied.

After a refreshing bath, a substantial meal and a short rest we take leave of Mr. Reelick with grateful hearts and hurry back to Surabaya. We reach that town at nine in the evening, hungry and tired but in the best frame of mind. The next morning at seven o'clock none of the pupils are missing when school begins.

PROJECT: A SAND MAP OF AFRICA*

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This project, which grew out of the study on Africa, was finally worded thus: "To make and place relatively on a large sand map of Africa, representations of jungles, people, animals, and other features of interest found in that country; and to make African life better known to another class of children." As to how the wording of this project grew into this form see "Procedure" below.

TEACHER'S AIMS

Ultimate. (1) To train for wise and effective citizenship; (2) to give proper attitude toward life; (3) to develop habits of quick, clear, rational thinking—children testing their own thoughts and the statements of others; (4) to inculcate in the schoolroom and in the children principles of democracy; (5) to train for leadership and group cooperation; (6) to lead children to the evaluation of their own ability and to the determination to live up to their greatest possibilities.

Immediate. (1) To educate thru much use of the "school arts"; (2) to establish such principles and generalizations in geography as will function in life; (3) to give opportunity for the development of initiative and originality, also to bring out the best traits of individuality which go to make strong personality; (4) to give mental concepts of life in the jungles, on the desert, and in semi-arid regions; (5) to give a rational knowledge of Africa.

MATERIALS

The following materials and sources of information were utilized in the working out of this project.

*Read before the National Conference on Educational Method at Chicago, Feb., 1922.

Maps: Tarr and McMurry, Rand McNally's Physical Map, Progressive Series World Map, Project-Problem Outline Map of Africa.

Geography Reading: Allen, Chamberlin, Carpenter, Atwood, Brigham and McFarlane, Smith's "Commerce and Industry," Crissey's "Story of Foods," "World Book," "Wonder Book," "Book of Knowledge."

Magazines: *National Geographic, Saturday Evening Post.*[1]

Literature: Bible Stories, "Quest of Four Leaf Clover," "African Stories" by Roosevelt, Biographies of Stanley and Livingston, Kipling's "Just So Stories," and "Jungle Book" I and II.

Material for Hand Work: Sand, saws, one-fourth inch bass wood for animals, wire, paper (green and cream for palm trees), clay for sphinx, pyramids, dam, etc., twigs, cotton, sponges, green paint for jungles, green grass for fertile spots.

PROCEDURE

Situation. While looking in geographies for pictures of animals to help in making a circus parade border for the room, the children raised the query, Why is Africa called the "Dark Continent?" It was decided that it was because of its barriers, namely, dense forests, lack of navigation and the great desert—making the interior hard to explore. Plans were suggested and discussed for making Africa better known to the class and to other children in the school. It was finally decided to make representations of things found in Africa and to place them on a large sand map.

About this time the class was asked to give a demonstration lesson for the Geography Section of the State Teacher's Association. It was decided that the lesson would be given on some feature of the map project.

RAISING OR LAUNCHING THE PROJECT

In working out any large project certain problems arise the solution of which will contribute something toward the complete success of the project. These problems should consist of obstacles, difficulties, or inquiries which grow out of and have direct bearing on the solution of the project, consequently the "drive" in the problems should have its roots in the final success of the project and in the satisfaction accompanied therewith. Curiosity is often a strong factor in the raising of the problems which will arouse desirable efforts toward the solution of the project. However, curiosity may lead to topics foreign to the project and result in disconnected and unrelated efforts, but if the project is very plain in the mind of the child and his purpose is strong enough he will put these *associate* responses aside to be followed up when the present enterprise is completed. If the *purpose* is strong enough the child evaluates and selects the problems pertinent

[1] Maud Radford Warren's article in June 1920 *Post*

to the working out of the project. It is the business of the teacher to direct, by means of questions and suggestions, all efforts toward the main issue,—the fullest possible realization of the solution of the project in hand.

During the development of this project a small sand table (3′×4′) was used and only one section of Africa at a time represented on it. (Forty-seven children seated in the room left no space for a large sand table.) At one time the "Sahara Desert" was illustrated, showing everything connected with this region. At another time an oasis, with all its features, was represented on this small sand table. At another time the jungle region was shown. Thus all the different features and life peculiar to Africa were worked out and illustrated in connection with the various problems arising. The culmination came when all these different features were to be placed in their proper places on the large sand map at which time their work was to be observed and enjoyed by many visitors. Thus the work of each day contributed something toward the success of this final "Red Letter Day" for the children.

Note how the following problems and queries have a direct bearing on the final success of this project.

PROBLEMS

Problem One. How large should the map be, and in what proportions? Judging by distances in the room, the width of the room was chosen by the children for the length of the map (21 ft.). A study of related distances from the equator to the Cape, and from the equator to the northern extremity were worked out. Distances from the 20th meridian to the east and west boundaries were found. These distances were reduced to feet. All the class worked on these problems. (Much good arithmetic material was found here.)

Problem Two. How should the sand be placed on the map? Should it be level? Where should the high lands be placed? (Physical map was studied and interpreted.) The entire class studied the surface, finding the general elevation to be 3000 to 4000 feet. The following highlands were represented on the small sand table used while studying: Atlas, Abbysinia Kilimanjaro, and Drakenberg.

Problem Three. What could be made to be placed on the map? Texts and supplementary books were studied and a list compiled of things found in Africa which could be represented on the map, i.e., elephant, camel rhinocerous, hippopotamus, snake, cattle, giraffe, horse, sheep, lion, tiger, monkey, ostrich, jungles, oases in the desert,

palm trees, apricot trees, wells, irrigation dams, pyramids, sphinx, natives, obelisk, diamond mine, gold mine, ships, jungle homes, flags, etc.

Problem Four. What flags should fly over our map? Study was made by entire class of the possessions of European countries of Africa. Countries were outlined on small sand table. Something of the history of territories and of their acquisition by European countries was learned. European flags and pictures of flags were brought. A group made flags for the sand map. Study was made of the disposition of German territory to England, France, and Belgium. The flags were made of drawing paper, 2″ by 1½′. They were colored with crayons and glued to toothpicks to stand on the map.

Problem Five. How large should things be made? The necessity for a standard of measurement was realized. The palm tree was selected by the children to be the standard. It was to be made one foot high and everything else made in proportion.[2]

Problem Six. How should the great northern half (Sahara Desert) of Africa be represented? Study of the desert brought out the extent, the cause for the desert, the winds, the soil, the climate, and the fact that a desert is not simply a hot, flat, sandy expanse, but that it has cool nights, hills, also some rain. The oases were studied; the cause, the importance, and also what would be found in them. Caravan routes were traced. Plans were made as to how best represent an oasis. A group of girls made the palm trees. Materials:—A piece of wire about a foot long was fastened to a two inch square of wood. The wire was wrapped with cotton, then stiff buff wrapping paper a half inch wide was wrapped around and around over the cotton. Palm leaves were fashioned from green paper and secured at the top. Clay was placed over the base to hold the palm tree.

Another group planned to represent the oasis life; people, industries, irrigation, etc. A French flag was made to fly over the desert.

Problem Seven. Who are the desert peop'e and how are they to be represented on the sand map? Study was made of the desert people. A group of boys was selected to make the Bedouins and their tents out of wood and cloth. Patterns were drawn and one-fourth inch bass wood and turn saws were used to make the Bedouin.

Problem Eight. Should all of northern Africa be represented as a desert? Study of a vegetation map revealed the fact that north of the Atlas Mountains and in the Nile Valley were fertile fields under

[2] Lessons in Arithmetic using ratio and proportion in working out height of the camel, the sphinx, etc. in proportion to the palm tree, followed.

cultivation. Algeria and Morocco were studied. The cool breezes from the Atlantic, on the part of Morocco shielded by the snow-capped Atlas Mountains, were found to cause the most delightful climate of Northern Africa. Industries were studied. (Generalization:—"Marked improvement can be made in an uncivilized country by civilized people, especially by means of travel, transportation, and methods of farming, modern conveniences, telegraph, telephone, and motor cars.) A group of children planned to represent this on the map. Small aeroplanes were made and railroads laid; green sawdust represented the fertile fields of Morocco.

Problem Nine. An oceanic climate explains the possibilities for agriculture in Morocco. How is civilization in the Nile Valley made possible? How can it be shown on our map? The following sub-problems grew out of this problem:

1. From study in the supplementary readers the children found that this was because of the rise and fall of the Nile, fertilizing the soil and supplying water for irrigation.

2. What causes the overflow? Headwaters of Nile were located. Causes of the seasons were reviewed. The shifting of equatorial belt was studied. (Splendid opportunity for teaching physical geography, monsoons, rotation, revolution, and inclination of the earth on its axis causing seasons.) A felt need was created thru desire to know the cause of the flooding of the Nile due to heavy rains falling in Abyssinia during our northern summer.

3. It is said that a man can stand with one foot on cultivated soil along the Nile, and with the other on the desert How can this be true? The study of the distribution of silt along the Nile was made. The study of irrigation of fields was made.

4. What leads us to believe that Egypt is an old country? References to the land of the Nile in Biblical writings were found. History from early times down to the present government of Egypt as a British protectorate was studied. Bible stories pertaining to Egypt were told in the class.[3]

In preparing to tell the Bible stories, silent reading to a definite purpose was occasioned. In telling the stories, organization of subject matter, judging what to tell, selection and use of language provided opportunity for English as a school art.

5. How and what can be shown on the sand map of the products raised in Egypt? (Distinction was made between fertile and desert

[3] Geography is the story of man and the earth. It is earth-determined. In studying the history of Egypt man's response to geographic influence is emphasized.

Egypt.) Cotton, amount and quality, were noted. The story by Maud Radford Warren in the *Saturday Evening Post*, "Fortunes Lost and Won in the Egyptian Cotton Markets" was read. Other products were studied; imports and exports were learned. A group made ships to show what was brought to and sent from Egypt.

6. How can the old methods of irrigation along the Nile be shown? Two boys planned to make of clay and wood a representation of the old method of irrigation. Other boys made representations of the more modern methods—showing dams, canals, wells, and pumps. They used clay to make the Assuan dam.[4]

7. What can be made to show why many tourists go to Egypt? Alexandria and Cairo were represented by using building blocks. Their location and importance were noted. The delta was shown on the sand table. Pyramids and sphinx were studied. A group made them in proper proportions. Clay brought from the Missouri river was used for pyramids; the artist in the class modeled a wonderful sphinx of real clay.

8. Pictures of palm trees and the Nile with a pyramid in the distance were made both in pencil and with crayons. Desert scenes and silhouettes of cut paper were made. Following a suggestion in the course of study in art, animals of Africa were blocked out and posted on the walls of the room as a circus parade of African animals.[5]

Problem Ten. What material is to be used,—where and how is it to be obtained? Materials:—Clay, one-fourth inch bass wood, scroll saws, paper, building blocks, wire, cotton, green paper to cut up for grass, materials for ship building, trains, track, aeroplanes, etc., were listed. The list was placed on the board and children planned to supply everything. Several boys went to the river for clay. A number of boys brought scroll saws. Bass wood was purchased, school paper was used, girls brought cotton and wire for palm trees. Wood for ships was brought from home.

Problem Eleven. Why is it necessary to have caravans crossing the desert? The personnel of a caravan, the routes followed, experiences in the desert, products carried in and products carried

[4] Man's adaptation to environment and his response to geographic influences is a basic principle in geography. It is the teacher's business to lead pupils to make such deductions. Such deductions may not be of genuine interest to children but thru the approach of something that does interest them they grow to interpret geographic facts.

[5] Eight sub-problems were brought out under Problem Nine. This shows how minor questions are raised in the solution of the main problem. Problems are found more inspiring than topics as they not only are more thought provoking but throw out a challenge to be met, accepted, and worked out by the children.

out, were discussed. Many interesting relations were brought out such as, the adaptation of p'ants to the desert, the interdependence of the oasis people and the people of our own country, etc. A group was formed to show the Soudan, and to tell what is brought there by the camels and what they carry out.

Problem Twelve. Why is the camel the animal used in crossing the desert? Much curiosity was aroused in connection with the study of this "ship of the desert." Why is he so well adapted to desert conditions? Thus, the use of the hump, this ability to store water, his hoofs, his nostrils, and other peculiar characteristics were learned with interest.

The children made camels of basswood and a group prepared to tell about them. (A good generalization was brought out using Timbuktu as an example of how cities are formed at a break in transportation. This was connected with the cause of the location of Kansas City.)

Problem Thirteen. Why do we make the date palm to place on the desert? The answer to this query brought out the use of dates in Africa and in our own country as a food, also as a product of the oasis. The whole date industry was studied,—including cultivation, picking, packing, and shipping.[6]

Problem Fourteen. What should be represented in the jungle home? The small sand map was used in planning the jungle home. First, the Congo river was placed on the map and the problem of why a great river and dense forest were found there, solved. Comparisons were made with South America. The children learned from the geographic pictures about the natives and the animals. Patterns of the animals were cut in proper proportion. The animals, including families of elephants, tigers, lions, giraffes, snakes, and other jungle animals were made from clay to be placed in their home on the sand map. A jungle home was made, using reeds woven in and out around sticks to make the round wall. A grass top was placed on for a roof. Interesting problems, such as:—How do jungle natives carry their burdens?; Who in United States carries things the same way?; Why are the jungle people there? etc., came up and were discussed. Many

[6] An excellent opportunity was provided in English by the use of National Geographic Society pictures on Africa. Much was learned from the pictures themselves; the printed information under the pictures was instructive also. We are becoming more and more convinced that visual education is of great importance. Children remember what they see. They also learn to interpret geographic relations as seen in pictures. Describing pictures is not only of value in oral English but it has a moral value. Children learn to tell what they see and tell it exactly as they see it.

read accounts of Roosevelt's, Stanley's, and Livingston's explorations in the jungle. Interesting accounts were given to the group.

Trees were made of twigs and green paper, also twigs and sponges painted green were used. Natives, including Pigmies, were made of clay and wood to inhabit the jungle.

Problem Fifteen. Why was South Africa worth fighting for by the English? This problem introduced the study of South Africa and the preparation for representing it on the sand map. Its value to the English because of ranching, diamonds, ostrich industry, and gold were discussed. A miniature gold mine was made to be placed on the map. A compound, including the diamond mine, the native workmen and their quarters was made. Ostrich families were made to be placed on the map. A Boor ranch was represented and the story of the "Out Lander" read.

THE RED-LETTER DAY

The culmination was reached on the day when the class was to give its final lesson on this project before the Geography Section of the State Teachers' Association. One group of children made the large sand map, about twenty feet square on the floor of a large assembly room. The physical features were all represented in their proper relations. Materials that had been made or collected to illustrate life, both plant and animal, on the various regions of Africa were properly placed on the map. Some of the main features represented were the oases, the desert, the jungle home and life in the semi-arid regions, the industries of South Africa, the valley of the Nile, especially the lower region of the Nile.

The lesson was simply an informal sharing and discussion of their experiences in securing information on Africa and in making the map.

The intelligence shown in the use of a large fund of information relative to Africa in this class discussion was the true test of the success of the enterprise. The children's aims are to be defined in terms of the success of the project. The extent to which the pupils have successfully acquired information, judged its relative value, planned and organized the same is to be determined by the extent to which it provokes intelligent and thoughtful discussions in these class conferences.

The human interest was supplied by the adaptation of the story from the book, "The Quest of the Four Leaf Clover," a charming story of the desert. The Bedouins made out of wood and clay became to the children the tribe of the "Beni-Amir." The well which they

made and placed on the desert was talked of by them as "The Well of Benediction." The romance of the story became interwoven with the desert which they were making and in which "Abdellah" was to live. Time was taken to read the story. Groups were formed in which they took turns reading or telling the story to the rest. The story being long, much was done as "silent reading."[7]

The jungle became real to them as they made a home for "the elephant's child" with his tall uncle the giraffe, his hairy uncle the baboon, and his broad aunt the hippopotamus.

The children made the "great grey-green, greasy Limpopo River" for the home of the crocodile and the Kolokolo bird.[8]

Real letters were written and mailed to friends telling them of their map. Invitations were written inviting the mothers to come and hear about the map.

The poem, "Africa," was memorized by most of the children.

One of the strong features of this project was the directness with which every activity contributed toward the final success of the project. Almost every problem or inquiry grew out of the needs arising out of the project.

After the project was under way every child in the room seemed to be working, planning, organizing toward a definite aim. Following this procedure it would have been impossible to have chopped the school day into separate subjects and separate periods. Needs grew out of the enterprise which required much use of books. Books were used as sources of information to solve the problems, also for enjoyment.

It was found necessary to have much drill. In discussing problems some of the children did not speak plainly. Other children helped them with articulation drills and practice in speaking clearly and plainly. Drills were necessary also in language forms in order to be able to tell about the map in good English. For instance, one boy was telling about the lion. He said, "You must not bother the lion when he is angry; if you do it will make him more madder." The children knew this was wrong but did not know why. It was suggested that the language books would help them. A lesson in functional English, featuring comparison of adjectives, followed. Many similar lessons were found necessary, the need being realized by the children.

School procedure was carried on, not in teaching subjects: geog-

[7] While planning and making objects for Egypt, naturally the interest of the pupils was drawn to the first people that inhabited Egypt.

[8] "Just So Stories" by Kipling

raphy, reading, English, but in doing the thing that was required as the next step in the working out of the project. They were working on a unit of activity which required much use of the school arts to help them to carry on the enterprise. All work for about four weeks, except arithmetic and music, grew out of this project.[9] The manual-training shop contributed its share in the making of objects to be placed on the map. A reasonable amount of time was consumed in making drawings illustrating physical features or plant and animal life for the map. Penmanship and spelling were motivated in a similar manner. Likewise, some arithmetic was required on problems growing out of the construction of the map, especially problems of proportion.

Thus the spirit of the project finally permeated nearly all the school time and contributed to its success. The "drive" or "inner urge," growing out of a felt need for material, information, and skill, was aroused in the class. For complete success, hence satisfaction, drill in the use of the tools of learning was motivated and favorable conditions supplied for the operation of the laws of learning.

Again, the children were practicing, on a reduced scale, the principles of democracy, such as initiative, self-reliance, cooperation. They were acquiring skill in judging, planning, and executing. They were getting practice in leadership and the following of properly constituted leaders. They were acquiring right attitudes toward school and school subjects while at the same time learning well the school arts and good habits of study. They were living a full life in the school room at that time.

They had worked hard and had created a beautiful product. Their satisfaction was supreme. However, with children the post mortem is short-lived; after the glow of satisfaction they are ready and eager to start something new. This is the way one activity leads to another. The clamor was, "What can we do now?" Many suggestions had been made during the working out of this project which the children were now anxious to carry out.

The sand map of Africa seemed to be the "Mason and Dixon Line" in these children's school life that year. They measured everything by it. After an activity was completed, they would say, "This is almost as good as Africa," or "I don't believe this comes up to Africa," or "This is better than Africa."

[9] It was necessary to set aside twenty-five minutes each day for arithmetic because these children kept books for the school cafeteria and centered arithmetic study around that.

The following are some of the results obtained thru the working out of this project:

Primary Results. Silent and oral reading, story telling, functional English, rational knowledge of Africa, fundamental principles in interpretation of geography, spelling, and penmanship.

Associate Results. Desire to read more of Roosevelt, desire to take up more woodwork, ability discovered in many things.

Concomitant Results. Learning to cooperate, group leadership, ability to follow, self respect, pride, inspiration to accomplish something worthwhile.

It is not to be supposed that these problems came up and were worked out in the exact order that they appear here. It is more than likely that two or more of them were under consideration at the same time by different groups of children. Neither are all the problems and queries that came up in connection with this project listed here. Many of the less important ones have been purposefully omitted in order to save time and space. However, enough has been included to show our conception of a project as it is applied to school work.

TO WHAT EXTENT DOES TOPOGRAPHY CONTROL CIVILIZATION?

ROLAND M. HARPER

University, Alabama

Any one who has observed the rather primitive civilization prevailing in the mountains of Kentucky, Tennessee, North Carolina, etc., and has never been more than a thousand miles away from there, is likely to be pretty firmly convinced that the difference between the mountaineers and the dwellers in the broad valleys and plains of the same states is due mainly to the rough topography which hinders communication. The same idea appears in an article by Miss Bessie L. Ashton in the January number of the *Journal of Geography*, in which a county in the Piedmont region of Virginia is compared with one in the prairies of Illinois. The two counties do not differ much in climate, but the one in Virginia is moderately hilly thruout, with crooked roads, while the one in Illinois is essentially level, and its roads run straight for miles.

Miss Ashton points out that the Illinois county has over twice as large a proportion of improved farm land as the Virginia one, has larger and more prosperous farms, with land worth over twelve times

as much per acre, and grows nearly three times as much corn per acre, with much less fertilizer. (There is not much difference in the value of all crops per acre, tho.) She says nothing about what is perhaps the best measure of agricultural prosperity, namely, the value of farm property, but in 1920 the average farm in Champaign County, Illinois, was worth $63,742, and that in Prince Edward County, Virginia, $4253. (Only a little over one-third of the farms in the former were operated by their owners, however, as compared with about two-thirds, both white and colored, in the latter.) But over half the farmers in the Virginia county are Negroes, and if we restrict the geographical comparison to white farmers we will find less difference To get separate figures for the two races we will have to go back to 1910. In that year the white farmers in Champaign County, Illinois (where over 99 per cent were white) were "worth" about $33,000 each and those in Prince Edward County Virginia, $3081. (It should be borne in mind that a dollar was worth just about twice as much in 1910 as in 1920, so that there was very little change in real wealth in either area during the decade.)

Miss Ashton seems to imply that these great differences are due mainly to the difference in topography. That unquestionably has had some influence, but if we examine the statistics for other periods and other parts of the country we will have difficulty in making satisfactory correlations. For example, in 1860 the topography, soil and climate of the two counties in question were essentially the same as now, except that the Virginia soils must have been leached and gullied a little since. Virginia had then been settled for about two centuries, but Illinois too was well past the pioneer stage, and Champaign County had been in existence about twenty-five years. At that time the average farmer in Champaign County had 205.5 acres, 141 of them improved, and his farm property was worth $4950, while the average farm in Prince Edward County had 441 acres, 223 improved, and was worth $6797 not counting slaves. (The dollar of 1860 was worth about the same as that of 1910, tho there were many ups and downs between.) The considerable changes in farm values since then can be explained fairly well by historians, but topography hardly enters into it at all.

Having made comparisons of the same regions at different periods, let us now compare some widely separated parts of the United States. The Rocky Mountains and Sierra Nevada certainly have little or no advantage over the southern Appalachians in topography, soil or climate, but one does not hear of any primitive mountaineers in the

western mountains. Gilbert and Brigham, in their "Introduction to Physical Geography" (1902), pages 191, 365, state that the western mountains are an exception to the general rule that mountaineers are primitive people, and try to explain it by saying that the chief industry there is the mining of precious metals, which has attracted 'the most hardy and energetic types of American life." But altho miners may be hardy, etc., one does not regard them as very highly civilized; and there are probably now more farmers than miners in some of the western mountain counties, anyway.

And strange as it may seem, the average standards of living of the western mountain farmers, as measured by the value of their property, are far above those in the eastern mountains, and even above many places in the fertile lowlands of the East. For example, the average value of property per farm in 1920 in different counties in the Rocky Mountains of Colorado ranged from about $9000 to $20,000, and in the Sierra Nevada in California from about $11,000 to $29,000; while the average for the state of Illinois at the same time was $28,108, for Indiana $14,831, for white farmers in Virginia $7780, for Kentucky whites $5703, and for Tennessee whites $5324. (Any one who has access to the requisite census reports can make similar comparisons for himself indefinitely.)

The explanation of the great difference between eastern and western mountaineers involves topography, but only indirectly. In both parts of the country the mountain valleys vary from narrow V-shaped gorges to flat-bottomed creek and river valleys half a mile or more in width. In the narrow valleys it is practically impossible to operate a farm large enough to make a good living for an average family, but the wide valleys are very well adapted for agricultural operations. Almost every mountain county in the east has prosperous farmers in its wider valleys, but they are outnumbered by the typical mountaineers in the narrow gorges, who make the statistical averages rather low. The ancestors of the mountaineers in most cases settled there a century or more ago, when standards of living were low nearly everywhere, and their descendants have not progressed much, on account of the difficulties of communication with the rest of the world.

The western mountains, on the other hand, have been settled mostly within the last fifty years, by people from the Mississippi Valley States, who had pretty high standards before they migrated, and have settled in the wider valleys and refused to push on up into the narrow valleys where they could not have supported themselves in the style to which they had been accustomed. It happens that most

of the mountain counties in both Colorado and California have been losing population for twenty-five years or more (some in California had more people in 1860 than in 1920). This may be due mainly to the decline of the mining industries, but it may also indicate that the farmers are raising their standards of living and leaving the less favorable locations. (A similar development may be imminent in the eastern mountains too, for the population of some of the counties has recently begun to decline.)

If time and space permitted, many interesting comparisons could be made between the farmers in the western mountains and those living on plains near the Atlantic coast and elsewhere; but enough has been said to show that we should be very cautious in assuming that civilization is controlled by topography, soil, climate, or any other environmental factor. Correlations of this kind which work beautifully in a single state or similar area may fail utterly when different states or distant countries are compared. For example, Denmark and China, Switzerland and Spain. The neighboring states of Nevada and Utah, Arizona and New Mexico, show marked differences in per capita wealth, etc., which are the opposite of what one who had read descriptions of those states without studying them statistically might expect, and these differences can hardly be explained by environment. We may as well admit that civilization is a sort of spontaneous growth that cannot be accurately predicted, any more than one could predict from a description of the physical features of some far-off country what species of plants or animals would be found there. Then too the state of civilization may vary greatly in the same region at different times without any corresponding change in environment as has been illustrated above by one example Geographers have a great deal of work before them yet in describing the conditions of civilization in different parts of the world, but the explanations may perhaps better be left to the ecologists, economists and sociologists.

Some readers may take exception to this last statement; but whether it is approved or not depends largely on one's conception of geography. Altho ecology is a comparatively new science (the use of the term dating back only thirty or forty years), its field is clearly defined as the study of the relations between organisms (whether plants, animals, or human beings) and their environment, and to call that geography, as might have been done with perfect propriety a generation or so ago, now only makes confusion. (This article itself would be perfectly appropriate for an ecological journal,

one of which has been in existence in this country for a few years past, but it is presented here on account of its relation to another article referred to above.)

Geography has its own special undisputed field in the discrimination, classification and description of the natural regions of the earth tho it is not claimed that that is all there is to it, and if any one thinks geography with ecology left out is too narrow and nearly exhausted a field, let him try to map the natural divisions of such a thickly settled and thoroly explored state as Massachusetts, Ohio, or Iowa, and determine the prevailing soil type, the commonest tree, the density, nativity, age, distribution, etc., of the population, the per cent engaged in manufacturing or agriculture, the average size and value of farms, the relative importance of different crops, the yield of corn per acre, etc., in each division. Of course a working knowledge of ecology, as of geology, climatology, botany, economics, etc., is very useful to the geographer, but it is not essential.

TOPOGRAPHY AND PROSPERITY: A REJOINDER

In view of Dr. Harper's misconception of the meaning of the article criticised by him it has seemed worth while to make reply. He seems to think that the author of the article in the January number of *The Journal of Geography* to which he has referred, placed Prince Edward County in the mountains of Virginia and ascribed to the inhabitants the primitive civilization characteristic among mountaineers in regions isolated from the outside world by difficulties of communication. Neither of these was intended. *Prince Edward County is not a mountain county.* It is a part of a low, much dissected plateau lying some sixty miles east of the Blue Ridge. It is within easy reach by rail of Lynchburg, a growing city of thirty thousand people, on the west, and of Richmond, one of the large and progressive cities of the United States, on the east.

Like Champaign County, Illinois, this Virginia county is predominantly agricultural; it has few, if any, manufacturing industries worth mentioning, and its chief attraction to outsiders is the educational opportunities offered by its schools of higher learning. The better class of farmers, tho perhaps somewhat more conservative, as is likely to be true in the older communities, rank very favorably in culture and intelligence with the same class in Champaign County, and it is reasonable to suppose that, with equally favorable con-

ditions of climate, soil, and surface, they would be equally as prosperous as the Illinois farmers.

It is undoubtedly true that the total wealth of Prince Edward County is somewhat reduced by the fact that a large number of the farmers are Negroes. As was stated in the original article the Negro population is fifty-five per cent of the tota for that county. To measure this factor, however, is quite another matter as no adequate data can be obtained from which anything approaching accurate conclusions can be reached. It certainly is not probable that the major part of the difference in material wealth between the two sections can be explained in this way. A discussion of this phase of the situation was not attempted as the influence of racial factors on human development does not fall within the province of geography, and the intention was merely to give "some contrasts in geography" between these regions.

As many factors must be taken into account it is clear that it is useless to make comparisons between regions that differ widely in every respect; as, for instance, one of the counties in the Rocky Mountains of Colorado, where the average so-called farm covers more than a thousand acres, less than a third being improved, and where stock-raising is the chief interest on the farm, with the average county in Indiana or Illinois. It is equally futile to compare regions in widely different stages of development, as, for example, Prince Edward County after two centuries of occupation with Champaign County after only about a quarter of a century,—altogether too short a time to allow human activities to become fully adjusted to conditions of environment. Such comparisons prove nothing. The figures given for these counties in 1860 only raise the question as to why the difference in favor of the Virginia farmer was not greater. In an old, well developed region where demand for land was great and the price of labor at a minimum his farm of 441 acres should have been worth more than twice as much as the 205 acres in the new country where labor was scarce and land was plentiful and cheap. *Undoubtedly it would have been had geographic conditions been equally favorable.*

As to comparing the civilization in the two regions the author of the article under criticism made no pretense of doing so. Civilization and material prosperity are *not* synonymous. Civilization is measured by something more than the amount of money in one's pocket and the kind of conveyance in which one rides. Until we arrive at a more satisfactory conception of what constitutes civilization it is best to

refrain from attempting to make such comparisons, especially between people who are very much alike.

It is true that geographers encounter many difficulties in the interpretation of human response to geographic conditions, the factors are so various and variable. Nevertheless, the influence of topography is, in many cases, too marked to be mistaken or ignored. Even Dr. Harper recognizes its influence when he says that the higher standards possessed by the inhabitants of our western mountains were acquired in a region of more favorable topography,—the Mississippi Valley States.

BESSIE L. ASHTON

THE NATIONAL COUNCIL MEETING

Cincinnati—1923

The next annual meeting of the National Council of Geography Teachers will be held in Cincinnati, December 26 and 27, 1923.

The American Association for the Advancement of Science is holding its annual meeting, Convocation week, in Cincinnati at this time and many affiliated societies will gather here during this week. Papers of importance will be presented, therefore, not only in the special field of geography but in many allied fields of endeavor.

The National Council of Geography Teachers is primarily interested in the teaching of geography and teachers of geography have had, before the organization of this association, no particular means of threshing out the problems which confront them in the class room. Within a few years, the Council has become an important body, and it should have the active support in membership, always, and in attendance at the annual meetings at times, of every teacher of geography.

The meetings at Ann Arbor last December were eminently successful and those in attendance reported much good coming from them. The papers were of the helpful variety, of direct practical importance, and the discussion of these papers was lively and satisfying. The Cincinnati meeting has the promise of attaining the high standard set by the Ann Arbor meeting of December, 1922.

It is the plan, now, to hold at Cincinnati an afternoon, an evening and a morning session. At the evening session, arrangements will be made for dinner, after which a paper of live interest will be presented for discussion. At the close of this discussion the annual meeting of the Council will be held.

At the time of the writing of this notice, the following speakers have accepted an invitation to appear on the program:

Professor W. R. McConnell, Miami University, Oxford, Ohio
Miss Jessie B. Strate, East High School, Cincinnati, Ohio
Professor William M. Gregory, Cleveland School of Education, Cleveland, Ohio
Professor E. E. Lackey, State Normal School, Wayne, Nebraska
Miss Bessie B. Knight, South High School, Minneapolis, Minnesota
Superintendent Randall J. Condon, Cincinnati, Ohio

The address of the retiring president, Robert M. Brown, College of Education, Providence, Rhode Island, will be given at the opening of the morning session.

Two or three other speakers will be added so as to round out the program. Altogether it is a program which teachers of geography will enjoy, and which it will not pay to miss.

GEOGRAPHICAL NEWS

On March 24th, 1923, there was held at Clark University a conference on Polish affairs. This conference was addressed by professors of Clark University, by Professor Ehrlich of Lvow, Poland, by the Commercial Councillor of the Polish Legation, by professors from Harvard and Columbia Universities, and by citizens of Worcester of Polish descent.

In the large hall in the Geography Building, an extensive exhibit illustrating the development of Polish geography of the nineteenth century was open to the public. This exhibit consisted of materials gathered by Dr. Novakovsky of Clark University, while making special studies in Poland during the autumn and winter of 1922-23. The exhibit included 125 portraits of Polish explorers and geographers, 230 maps, 50 atlases, 300 pictures of scenery and of cities, 15 large pictures for school use in teaching home geography, more than 1000 books and 40 magazines. This extensive exhibit illustrated the important contributions of the study of geography which have been made by Polish writers. An article by Dr. Novakovsky on "The Natural Resources of Poland" will appear in the *Journal of Geography* at an early date.

During the spring months three teachers colleges in separate states cooperated with state councils in issuing special publications for the advancement of geography teaching. This work was done under the efficient direction of Miss Eulalia E. Roseberry, State Teachers College, Pittsburg, Kan; Miss Harriet Smith, Sam Houston Normal College, Huntsville, Tex.; and Ernest E. Holmes, State Normal School, Lewiston, Idaho, with the hearty support of the presidents of the respective institutions. The presidents and these three leaders deserve high credit for setting a standard for others. Let us hope that other presidents may be sufficiently far-sighted to see the value of these publications not only to geography teaching, but to their colleges.

Each publication contains articles of special value to teachers in active service and two emphasize the importance of cooperation among geography teachers thru the State and National Council. The Pittsburg bulletin contains 24 pages, the Huntsville 50 pages, and the Lewiston 26 pages. Those who desire to be effective leaders in their own institutions and states, and desire to carry the message of better geography teaching to teachers in service should secure copies and profit thereby.

The State Council of Maine is issuing the *Maine Geographical News Bulletin* under the direction of Miss Hazel D. Shields of the Portland High School. It carries articles on geography teaching and news items, and is gotten out by the printing department of the Portland High School. Altho the Maine Council has been organized but a short time it is becoming a leader rapidly.

The Massachusetts Council continues its *News Bulletin* under the editorship of Jesse W. Hubbard. The Massachusetts Council has long been one of the strongest and most effective organizations in the country. It is now conducting an intensive campaign to enlarge its membership and that of the National Council.

The Geography Council of Southern California plans to hold a meeting every six weeks. The meeting last December was addressed by Dr. Frank McMurry and Dr. Lotus C. Coffman, President of the University of Minnesota. Both of the speakers expressed their desire to see the subject of geography given a larger place in the curriculum and felt certain that the Council would be of great assistance in furthering this end.

Dr. Albert Perry Brigham of Colgate University has an article on "Idées Sociales et Politiques en Amérique," in the *Revue des Sciences Politiques*, Paris, January-March number, 1923. The paper was the concluding lecture in a course on the "American Domain and the American People," given before the Oxford University School of Geography in August, 1922.

GOVERNMENT PUBLICATIONS FOR TEACHERS[1]

Washington, D.C.
July 2, 1923.

Professor George J. Miller,
State Teachers College,
Mankato, Minnesota.

Dear Professor Miller:

It occurs to me that some of the teachers of geography may not know that the yearbooks of the Department of Agriculture for 1921 and 1922, which have been issued, and for 1923 and 1924, which are under preparation, are of a different character than those previously issued, and are largely devoted to a description of the economic geography of agriculture in the United States.

The 1921 Yearbook contains articles describing the geography, history, and methods of production and marketing of wheat, corn, beef cattle, and cotton, and includes "A Graphic Summary of American Agriculture." This "Graphic Summary" consists of 124 maps and grafs showing the distribution of each of the different crops and kinds of livestock in the United States, the agricultural regions, land relief, annual precipitation, length of frostless season, soil regions, the native vegetation, forest and woodland, improved and unimproved pasture, wet lands in need of drainage, irrigated lands, size of farms, value of farm land, farm ownership and tenancy, and the distribution of country, village and urban population.

The 1922 Yearbook contains a similar series of articles describing the economic geography of the production and marketing of dairy products, tobacco, minor cereals and hogs. This volume also contains a 100-page article on the forest situation, which is a notable contribution to the discussion of the proper use of our land in the United States and the conservation of our natural resources.

These yearbooks can be secured in cloth binding by members of the National Council of Geography Teachers upon application to the Congressman or Senator in whose district the applicant is living. Separates of each of these papers, bound merely in a paper cover, can be obtained, so long as the supply lasts, upon application to the Division of Publications, U. S. Department of Agriculture. Many of the universities are using these separates, especially the Graphic Summary, for supplementary reading. When they are desired in quantity for class-room purposes they must be secured from the Superintendent of Documents, Government Printing Office. The Graphic Summary costs 20c per copy, but most of the other separates are only 10c or 15c each.

I am sending to you, under separate cover, a paper on Land Utilization, which I gave before the Association of American Geographers about a year ago. This paper deals very largely with the geographic aspects of the problem in our country and has, like the yearbook separates, been found useful in teaching university classes. Should any members of the National Council desire copies of this paper, I am able to supply same at cost, which is 25c per copy.

Some of the members of the National Council of Geography Teachers may be interested to know that the Joint Congressional Committee on Printing has approved the completion of the volume of the Atlas of American Agriculture describing the physical conditions of the United States. The section on Natural Vegetation, prepared by Dr. Shantz, Ecologist, Bureau of Plant Industry, and Mr. Zon, of the Forest Service, is being lithographed and printed. It should be available for distribution to teachers in colleges and normal

[1] The material discussed in Dr. Baker's letter is of such high quality that we secured his permission to publish the letter in full. These publications are of inestimable value and open a new epoch in government publications. Copies should be available to every school in the country. Editor

schools in about six months. The Temperature section of the Atlas will be resubmitted in a few months, as soon as the data can be retabulated up to date and the maps revised accordingly. This Temperature section will be followed in a couple of years by the section describing the Soils of the United States. These three sections combined with the two which have been issued, namely, Precipitation and Humidity, and Frost and the Growing Season, constitute the physical part of the Atlas, which it is hoped may be eventually issued in a bound volume.

I am sending you this letter in order that these government publications may be made known to the teachers of geography in the elementary and secondary schools particularly, also to the classes in the normal schools. I am convinced that the most efficient method of promoting agricultural progress in this country is thru the instruction of children and young people in our schools, and it is for them primarily that some of these publications have been issued. If you publish this letter, will you also note that we shall be pleased to render any service we are able to the members of the National Council, especially in answering any inquiries they may wish to make.

With very best wishes

Sincerely yours,

O. E. BAKER,
Agricultural Economist

GEOGRAPHICAL PUBLICATIONS

Mark Jefferson. **Recent Colonization in Chile.** 52 pp., 5 maps, 1 diagram, 9 photographs; and **The Rainfall of Chile.** 32 pp., 7 maps (3 in color) and 3 diagrams. Research Series Nos. 6 and 7, American Geographical Society, N. Y. 1921. 75 cents each.

In the spring of 1918, the American Geographical Society sent Professor Jefferson to the Argentine Republic, Brazil and Chile to study recent European colonization in those countries. At that time much concern was expressed over the German and other European influence in those Southern American republics and apparently this expedition was dispatched to ascertain the facts in the case. Professor Jefferson was eminently qualified to undertake this important mission for, as a member of the staff of the Argentine National Observatory at Cordoba in the middle eighties, he had visited much of southern South America, had learned the languages and had become conversent with the scientific and other literature of the countries in question. In Chile attention was directed primarily to a survey of the German settlements in the southern part of the country where it was thought the German element predominated. The two bulletins under review are among the results of this survey.

In his bulletin on "Recent Colonization in Chile" Professor Jefferson states that the German element does not predominate in any part of Chile. He found that, even in the southern part of the country, there are from ten to twenty times more Chileans than Germans and concludes that the "Germanization of southern Chile is simply a myth." In explaining this limitation of the German element he shows that most of the German and other foreign settlements were made by evicting the peon squatters who previously had settled the land. This program was followed not because the Chilean peons necessarily are unsatisfactory settlers, but because land speculators thought that by introducing a German settlement in a given area the value of the lands about the settlement would be enhanced. Thus, in Chile, settlements of foreigners apparently have resulted from land speculations rather than from the opening of unoccupied territories. Professor Jefferson brings out the fact that there is little or no unoccupied land in Chile suited to settlements as in at least two-thirds of the country one or more elements of the natural environment

renders the land unproductive. Moreover, he estimates that the parts of the country now occupied have a population density of about 160 persons per square mile and as a result there are but few legitimate opportunities for foreign settlements within the occupied sections. He logically concludes that foreigners should not emigrate to Chile and points out the folly of introducing additional laborers into a country in which a notable proportion of the present population is without land or other property.

The survey is written in a pleasingly verile, pungent style and thruout reflects the hand of a skilled geographer. In fact, Professor Jefferson presents this social problem with such skill that, in effect, he introduces his reader to the geography of Chile. The publishers have done well by the author for the bulletin is beautifully printed and most of the illustrations are models of their kind. The photographs opposite pages 2, 3 and 7 demonstrate what an effective form of presentation a picture becomes if dignified by a full page. The black and white maps which accompany the text are models of their kind. They have something of the quality of fine etchings and demonstrate that Professor Jefferson probably is the most effective worker in this medium in this country.

The center of interest in the bulletin on "The Rainfall of Chile" is a new map showing the mean annual rainfall of that country. This map, drawn in color on a scale of 1:10,000,000 is based on data taken from 167 stations during the "approximate epoch from 1900 to 1919." The author by showing his method of selecting and recording his data and of drawing the isohyetals greatly increases the value of his map. The outstanding virtue of Jefferson's map lies in the fact that it indicates variations of rainfall in the settled productive middle portion of the country. The map shows clearly the relation of the coast ranges, the central valleys and the high Andes to the rainfall. Another especially useful feature of the bulletin is a map showing the distribution of forests, irrigated lands and dry farms in central Chile. This map is placed on the same page with a rainfall map of the same region and scale, thus assisting the reader to visualize the relation of rainfall to land utilization in the most important part of the country. Both Bulletins deserve the attention of those interested in South American problems and conditions.

CHAS. C. COLBY

University of Chicago

Frank McMurry and A. E. Parkins. **Elementary Geography.** 322 pp., 323 maps, photos and diagrams. **Advanced Geography,** 501 pp., 504 maps, diagrams and photos. Macmillan Co., N. Y. 1921.

In this series of new geographies for the elementary schools, the authors have drawn from the maze of details, essential facts fundamental for a good working knowledge of geography, without giving the impression of abstraction. The material is given great variety of treatment; is well adapted to the experiences of children, and lacks the marked artificial boundaries between the topics taken up. Each topic is distinctly characterized, yet falls naturally and easily into the needs which grow out of the sequence of treatment. The homely facts of a child's everyday experiences are linked up with earth relations in a manner so telling and colorful of life, that few who read the texts would not be stimulated to further observation and research.

Each lesson is thoroughly humanized. Natural settings with their life responses, not only how man works in the abstractive and manufacuring industries, but also how he does his part in the professions and how he plays, are well described. The interdependence of regions as well as individuals is clearly brought out.

A noteworthy and mportant feature of these books is their pleasant suggestions with regard to "how to study the lesson." Illustrative material, italicized words, follow up questions, the text, and "review talks," all emphasize this phase. Few textbooks offer such variety and excellence of illustrations, maps, diagrams, and grafs, so well placed to enchance the clearness and quality of the text. The good choice, and placing close to-

gether in sequence the related maps, aid greatly in the application of common sense and reason in establishing the relations between geographic responses and their natural environments.

Every teacher of geography will find this set of books helpful through the abundance of examples of presentation of geographic materials. Problems, projects, topics, the story method, dramatization, and the journey method are suggested and worked out. How to use the journey method is clearly presented on pages 91–93, Book I, A trip on the Great Lakes; pages 138–9, a trip to the West by the southern route; pages 191–3, a trip on the Amazon. Good educational progression marks the treatment of materials throughout both books of this excellent series.

Chicago Normal College, Chicago, Illinois ALYDA C. HANSON

Vilhjalmur Stefansson. **Hunters of the Great North.** 301 pp., 2 maps, 25 photos. Harcourt, Brace & Co., N. Y. 1922. $2.50.

This is Mr. Stefansson's attempt to give the young people the vivid impressions he got when he first went to live with the Eskimos. The book is really an account of the people, life and living in Arctic America.

Since it is for children I will let them speak. An eighth grade boy, twelve years old, says it is interesting. Another twelve-year-old boy says, "The book should interest every boy, girl, man and woman on our continent. There is not much humor in the book, nor yet is it grave or stiff. It is one of the best books which I have ever read. I cannot select any uninteresting part." An eleven-year-old boy, who has had every page of it read aloud to him, says he likes it because you "do not have to read through a lot of description that isn't necessary to the story." A ten-year-old boy likes to have it read aloud, but will not read it himself. The book seems particularly effective for reading aloud.

Columbia University J. RUSSELL SMITH

Robert F. Griggs. **The Valley of Ten Thousand Smokes.** 340 pp., 9 maps, 233 photos. National Geographic Society, Washington, D. C. 1922. $3.00.

This superb volume tells the story of the discovery of one of the world's wonders—"The Valley of Ten Thousand Smokes"—and its prolonged study by expeditions sent out by the National Geographic Society. The area, covering over a million acres, was set aside by President Wilson as the Katmai National Monument thus assuring its preservation as a public recreation ground.

The content of the volume has previously appeared in the *National Geographic Magazine* but, in this form, it makes a splendid continuous story that should find a place in all school and public libraries as it will be a constant source of pleasure to old and young alike. The illustrations, many of which are in color, and the typography is of the same fine quality that characterizes other publications of the Society.

Dudley S. Brainard. **The Pupil's Workbook in the Geography of Minnesota.** 64 pp. One map in color, grafs and outline maps. Ginn & Co., Chicago, 1922.

George J. Miller. **Geography of Minnesota.** 41 pp. 58 maps, diagrams and photos. John C. Winston Co., Philadelphia, 1922.

Bertha C. Melcher. **The Sunbonnet Babies in Italy.** 187 pp. 1 map, 110 pictures in color. Rand McNally, Chicago, 1922.

This is an addition to this excellent and popular series.